Nuclear Engineering: A fulfilling career

“It’s creative. It’s innovative.”

“You can have a tremendous impact on people’s lives.”

“I love the challenge and the problem solving.”

“The field needs people with all different backgrounds, skills and abilities.”

“I like knowing that my work is going to make a difference.”

All these people are talking about nuclear engineering, science and technology. And, they all love the challenge and the unique opportunities this growing field brings.

“Students should consider careers in nuclear energy,” said Dr. Micheal Corradini, professor. “In particular perhaps nuclear power or medical physics or health physics because many of these fields are really growing in the U.S., and they are growing around the world in Europe and Asia.”

“These are all very exciting areas, and they are all growing,” said Alireza Haghighat, Ph.D., professor. “And there needs to be a lot of research done in these areas.”

“This field is so rewarding. There are so many places that you can go with it,” said Matt Boies, undergraduate student. “There are so many incredible people in the field.”

“I like that when I come in every day there’s something new to be found,” said Colleen Polit, graduate student. “I like that not everything there is to know about the field is known.”

“There’s tons of different challenges and lots of different areas,” said Ross Radel, graduate student. “The materials are always changing. There’s always expanding sorts of technologies.”

“There’s huge amounts of opportunities to learn about technologies on a very, very small scale or a very, very large scale, depending on how your interests lie,” said Dr. Eric Loewen, researcher.

“There are so many paths that you can go down,” said Joshua Nowak, graduate student. “And even if you don’t go down that path in your schoolwork, you can still go down that path in your career because they really want to teach you.”

Today, there are many career options for nuclear engineers, scientists and technicians—electricity production, nuclear fuel design, medical research, environmental protection, even archeology. And with the shortage of qualified professionals, nuclear graduates are in high demand and at a pay scale that is much higher than other graduates will ever see.

“The placement rates for graduates are two to three jobs offers per graduate,” said Lisa Marshall, director of Outreach Programs.

“We’re trying to hire 300 nuclear engineers in one year. In all the universities in the United States there are about 200 nuclear engineers, so there’s a huge demand for nuclear engineers in the job market,” said Dr. Eric Loewen, researcher.

“The job opportunities in this field are limitless. The good thing about our program is that we actually have the industry coming to us, saying we need your graduates immediately,” said April Hutton, Recruitment and Outreach coordinator.

Historically, nuclear engineers, scientists and technicians have gravitated toward nuclear power as a career choice. Those jobs are still in tremendous demand today. The next generation of nuclear reactors is being developed, and with their evolution comes significant career opportunities and scientific challenges. Power consumption throughout the world is growing at a tremendous rate, and nations are turning to nuclear energy as a safer and cleaner option over fossil-fueled electrical plants.

“We really have an ethical and moral responsibility to the growing population of the world, not just the United States, to deliver cheap, efficient and clean electricity to as many people as we possibly can,” said Admiral Skip Bowman, CEO Nuclear Energy Institute. “This is a huge challenge, a big problem that needs to be fixed, but it’s something that I think young people can take pride in being a part of.”

Nuclear uses in the medical field have soared in recent years. Physicians rely on x-rays to diagnose tumors. Radiation is a common treatment for cancers, and radio isotopes are crucial in the development of new drugs.

“Nuclear technology is so widely used in hospitals now for imaging, for cancer treatment, for MRIs, CTs,” said Michael Leisenfelt, undergraduate student. “We’ve had a number of students in our department who are going to graduate with a nuclear engineering degree and go right to med school.”

Nuclear engineering, science and technology are increasingly important to solving one of the planet’s most critical problems: hunger. Nuclear scientists use radiation techniques to produce higher-yield crops and protect livestock from disease. These same scientists are also finding innovative ways to eliminate pests without the use of traditional chemicals. These are all ways in which nuclear science can improve our lives.

“The work I do often involves taking like a t-shirt or like a mosquito netting and taking a chemical like a mosquito repellant and making a permanent bond between the two. And this has a major impact in the world,” says Carrie Cornelius, graduate student. “In Africa, a lot of children die every year from malaria, and if we can make this chemical graft, if we can make this permanent where you can wash and it doesn’t go away, it will save the lives of hundreds and hundreds of children.”

Nuclear energy is propelling us into the future. The miracle of space travel would be grounded without the fundamental work of nuclear scientists and engineers.

“We’re working on the foam on the external tank of the space shuttle,” said Daniel Shedlock, graduate student. “And that’s the pieces that fell off and caused damage to the Columbia. We shoot radiation particles in and we look at the radiation particles that are bouncing back, and we can tell if there are any defects that would cause it to come off and possibly hit the orbiter.”

If you’re someone who is looking for a real challenge and you want to make a difference, you should explore a career in the nuclear sciences. There’s never been a better time to get involved with these fields. And it’s a great opportunity for you to make a positive impact in the world.

“The future of nuclear power and nuclear energy, the nuclear engineering sciences and the health physics field has never been brighter in this country,” said Admiral Skip Bowman, CEO Nuclear Energy Institute.

“The field is wide open,” said Dr. Kenneth Lewis, professor. “There seems to be unlimited horizons and prospects to do really great things in the field for humanity.”

“I will be making a difference every day,” said Joshua Nowak, graduate student.

“This is the place to be,” said Colleen Polit, graduate student. “If you look for something that’s new and exciting, and there’s plenty of opportunity for you to explore pretty much wherever you want to go.”

To learn more about educational and career opportunities in nuclear engineering science, visit us aboutnuclear.org and nuclear.gov.